9-1926

Circular No. 62 - Summary of Publications

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UTAH
AGRICULTURAL EXPERIMENT STATION

CIRCULAR 62 **SEPTEMBER, 1926**

SUMMARY OF PUBLICATIONS

Circular No. 62 contains a summary of publications of the Utah Agricultural Experiment Station issued since September 1925. The publications of this Station are no longer sent to a general mailing list (except in the case of libraries), but are sent only **on request.** Therefore, copies of any of the publications listed will be sent without charge to those requesting them as long as the supply is available. However, in the case of abstracts of scientific and technical papers the supply is **very limited** and the requests for these should therefore be limited as far as possible only to those who are especially interested in this phase of experimentation.

Check those publications desired, FILL IN NAME AND ADDRESS in space provided above (write legibly), place this circular in a **stamped envelope,** and return to:

Division of Publications,
Utah Agricultural Experiment Station,
Logan, Utah, U. S. A.

Bulletin No. 195—Field Studies of Sugar-beet Nematode

George Stewart and A. H. Bateman*

Much of the data of the survey in this publication has been secured from the Amalgamated Sugar Company. A complete survey of the nematode in the sugar-beet growing districts has been given.

Except for crop rotations, all common agronomic practices that normally increase yields were found of no avail. One year of other crops between two beet crops on heavily infested land was of no measurable benefit. Two years of other crops gave some increase in yield, three years considerable, and four years almost entirely restored the yields. Beets can be grown with safety only one year at a time after four years of other crops on heavily infested land. About 20 per cent of heavily infested land can be grown successfully in beets.

Bulletin No. 196—Control of the Fruit Tree Leaf Roller by the Use of Oil Sprays

I. M. Hawley

This publication should be of particular interest to the fruit growers of the state. The results of this investigation cover a period of three years. Complete descriptions and graphic illustrations of the insect in its different stages of development (egg, larva or caterpillar, pupa, and adult) are presented. The life history of the insect and a general discussion on methods of control of the fruit tree leaf roller are also included.

Bulletin No. 197—The Pear Leaf Blister Mite as An Apple Pest

I. M. Hawley

While the blister mite is of foreign origin, yet it has been prevalent in the United States for many years, occurring in Utah probably as early as 1898.

During the last few years this pest has become abnormally abundant in some sections of Utah. At first this pest confined its activities to the pear only, but for the last twenty years it has also been found working on apple foliage. A very complete description of the blister mite, together with its life history, has been included in this publication. Experimental results include investigations over a 4-year period. The different sprays and their comparative results are discussed as well as recommendations given for the control of this orchard pest.

Circular No. 57—Economy in Harvesting Sugar-beets

George Stewart

This circular tells how to get more from the sugar-beet harvest. In the first place great quantities of high-quality feed can be made as beet-top silage, and in the second place heavy wastes during beet harvest may be avoided without great expenditure of labor or time. The way in which to build a beet silo and the method of handling the tops is described in sufficient detail to enable a farmer to make one. Emphasis is placed on the great savings that come from topping beets at once after digging, from putting them in piles, and from covering the piles when they are left in the field for one or several days after digging.

*Graduate Student, Department of Agronomy

Circular No. 58—Potato Production in Utah

George Stewart

This is a revision of Utah Experiment Station Circular No. 40 (1919). However, the revised circular considers a number of important factors which makes the publication of especial significance to potato growers of Utah. In addition to the general facts about potato culture, particular attention has been given to the following problems: factors in production, preparation of the seedbed, varieties to plant, cultivation, irrigation, diseases and treatment, harvesting, grading, storage and marketing.

Circular No. 59—Control of Stinking Smut of Wheat with Copper Carbonate

By B. L. Richards and A. F. Bracken

The importance of treating wheat before planting cannot be overemphasized, and it was with this in mind that this circular was written. "During the season of 1925 this disease was especially prevalent, causing losses in certain fields of from 25 to 50 per cent, not counting the loss to the grower in reduced grade of grain."

Circular No. 60—Seed Potato Treatment

By B. L. Richards

This circular includes treatment for the four common surface tuber-borne potato diseases—Rhizoctonia (stem canker), scab, blackleg, and dry-rot. The control measures include: (1) corrosive sublimate treatment, (2) cold formaldehyde treatment, and (3) improved or hot formaldehyde treatment. The equipment for treating and the precautions to be observed with corrosive sublimate are carefully considered. Both the advantages to be derived from and the precautions to be observed in the use of the hot formaldehyde method are given consideration.

Circular No. 61—Rules and Regulations for the Third Utah Intermountain Egg-laying Contest

Byron Alder

This circular contains necessary information for entering the third egg-laying contest conducted by the Utah Experiment Station. This contest begins November 1, 1926 and ends October 30, 1927.

ABSTRACTS ON SCIENTIFIC AND TECHNICAL PAPERS*

74. **Losses in Harvesting and Threshing.** By A. F. Bracken. *In* JOURNAL AMERICAN SOCIETY OF AGRONOMY, Vol. 17, No. 8 (August 1925), pp. 508-514. During the harvesting and threshing seasons of 1923 and 1924 study was made in Juab Valley of the losses from combine harvester-threshers and headers and stationary threshers. Six "combines" and two headers and threshers were tested in 1923, and eleven combines and six headers and three threshers were under trial in 1924.

In 1923 the average loss from the combine amounted to 0.61 per cent, from headers to 3.56 per cent, and from threshers 1.56 per cent. Adding the header and threshing loss, the total amounted to 5.12 per cent.

*The supply of scientific and technical reprints is very limited, and it may not be possible in all cases to supply requests made.

The 1924 results from the combine totaled 1.06 per cent loss. During this season the heading loss was 4.22 per cent and the stationary threshing loss 0.49 per cent. Adding the latter two losses, the total for this method of harvesting and threshing becomes 4.91 per cent.

Summarizing the data for the full period of the test the loss from the "combines" totaled 0.83 per cent, headers 3.99 per cent, and stationary threshers 1.02 per cent. When the loss from the headers is added to that of the stationary threshers this loss becomes 5.02 per cent. These results clearly show a significant difference in favor of the combine-harvester threshers.

75. **The Influence of Irrigation Water and Manure on the Composition of the Corn Kernel.** By J. E. Greaves and D. H. Nelson. *In* JOURNAL AGRICULTURAL RESEARCH, Vol. 31, No. 2 (July 1925), pp. 183-189 The composition of the corn kernel was found to vary with the available plant-food. The ash, calcium, phosphorus, and potassium increased as the water or manure applied increased. This increase comes largely from an increased bacterial activity in the soil. Hence, manure is valuable not only for the plant-food which it carries to the soil but also an account of its action on the microorganisms in the soil. The corn high in mineral constitutents if fed would probably produce animals with larger frames and stronger bones than would corn containing a low mineral content.

76. **Key to the Cultivated Wheat Varieties of France.** By George Stewart. *In* JOURNAL AMERICAN SOCIETY OF AGRONOMY, Vol. 17, No. 11 (November 1925), pp. 741-747. This publication is a translation of Danaiff, Colle, and Siderot's book "Les Bles Cultives" published in French, Dupong, Paris, p. 151 (1922). French wheat varieties were classified in such a fashion as to use relative compactness of the spike as a major factor, whereas American classification keys have made this a minor factor. This publication is of value to agronomists and taxonomists, as well as to those interested in wheat varieties, in that it makes available in English the new French idea on varietal classification and description.

78. **The Effect of Sulfur on the Microflora of the Soil.** By J. M. Fife*. *In* SOIL SCIENCE, Vol. 21, No. 4. (April 1926), pp. 245-252. The sulfur content of the Central Experiment Farm (Greenville) soil is low. It was found that the application of sulfur to this soil increased the beneficial bacterial activities occurring within it. Hence, the application of sulfur to this soil not only furnishes sulfur needed by the growing plant, but it also stirs up biological actions which make available more phosphorus and nitrogen.

79. **The Moisture Equivalent of Soils.** By M. D. Thomas and Karl Harris**. *In* SOIL SCIENCE, Vol. 21, No. 6 (June 1926), pp. 411-426. In creasing the size of the sample employed in the moisture-equivalent method reduces appreciably the water retention in the case of soils of intermediate texture. The moisture gradient in the soil block is also large in these cases. These effects are smaller in very coarse or very fine-grained soils. Equilibrium is established very slowly in heavy soils, the final moisture distribution being nearly uniform. The water-retaining power of fine silt is emphasized. Reducing the size of the capillaries in the outside boundary also reduces the moisture retention in conformation to the thermodynamic theory of capillary equilibrium. Replaceable sodium in the soil complex gives an abnormally high "moisture equivalent."

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In Charge of Publications

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(College Series No. 224)